

**Amendments to the Claims:**

Please amend the claims as follows:

1. (Currently amended) ~~Charged~~ A charged particle emission component for providing a charged particle beam, comprising:

a first ultra-high vacuum (UHV) region ~~(102)~~ wherein the first UHV region does not comprise elements, which essentially block a portion of the charged particle beam;

a second UHV region ~~(104)~~; and

a residual gas diffusion barrier ~~(106; 206)~~ separating the first and the second UHV regions, ~~[[;]]~~ whereby the first ultra-high vacuum region does not comprise elements, which essentially block a portion of the charged particle beam; and wherein the first and the second UHV regions (102, 104) each have a vacuum flange (102a, 104a).

2. (Currently amended) ~~Charged~~ The charged particle emission component according to claim 1, further comprising an emitter ~~[[ (16) ]]~~ in the first UHV region for emitting the ~~beam of charged particle beam~~ beam ~~[[ (17) ]]~~.

3. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, further comprising an aperture unit ~~(110)~~ for differential pumping between the emission component and a further chamber ~~(112)~~ of a charged particle beam column.

4. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, ~~whereby~~ wherein the residual gas diffusion barrier has an opening ~~(107)~~ with a diameter larger than the diameter corresponding to the a beam emission angle; ~~preferably with a diameter corresponding to a beam emission angle of minimal 10°.~~

5. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the residual gas diffusion barrier ~~(106; 206)~~ has an opening ~~(107)~~ for the charged particle beam, the opening

[[has]] having a size of at least 1 mm, ~~preferably of at least above 5mm.~~

6. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the residual gas diffusion barrier acts ~~(106; 206)~~ as an extraction electrode for extracting or modulating [[the]] emitted charged particles.

7. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, further comprising at least one beam shaping element ~~(109; 18; 108; 402)~~ in the second UHV region ~~(104)~~, wherein the at least one beam shaping element blocks a portion of the charged particle beam by having an opening for the charged particle beam, the opening [[has]] having a size corresponding to a beam emission angle of ~~below~~ less than  $5^{\circ}$ , ~~preferably of below~~  $1^{\circ}$ .

8. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the first and the second UHV regions have in operation a maximum pressure of ~~maximal~~  $10^{-8}$  mbar.

9. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the first and the second UHV regions have in operation a maximum pressure difference of ~~maximal~~ one order of magnitude.

10. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the amount of charged particles impinging on surfaces located in the first UHV region is ~~maximal~~ maximally 20% of an amount of charged particles impinging on surfaces located in the emission component.

11. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the first vacuum flange ~~(102a)~~ corresponding to the first UHV region ~~(102)~~ and the second vacuum flange ~~(104a)~~ corresponding to the second UHV region ~~(104)~~ are connected to one vacuum pump ~~(502)~~.

12. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the first vacuum flange corresponding to the first UHV region and the second vacuum flange corresponding to the second UHV region are connected to separate vacuum pumps ~~(502a, 502b)~~.

13. (Currently amended) ~~Charged~~ The charged particle emission component according to ~~any of the preceding claims~~ claim 1, wherein the residual gas diffusion barrier is an isolating aperture and the first and the second UHV regions are UHV chambers.

14. (Currently amended) ~~Charged~~ A charged particle emission component for providing a charged particle beam, comprising:

a housing ~~(101)~~ of the charged particle emission component;  
an emitter ~~[(16)]~~ for emitting ~~a beam of the charged particles~~ particle beam ~~[(17)]~~ with a beam emission angle;  
at least one beam shaping element ~~(109; 18; 108; 402)~~; and  
a residual gas diffusion barrier ~~(106; 206)~~ directly subsequent to the emitter, ~~whereby wherein~~ the residual gas diffusion barrier separates the charged particle emission component into a first and a second ~~[[UHV]]~~ ultra-high vacuum (UHV) region, ~~whereby wherein~~ the residual gas diffusion barrier has an opening ~~(107)~~ with a diameter larger than the diameter corresponding to the beam emission angle~~[[;]]~~, and wherein the first and the second UHV regions each have a vacuum flange ~~(102a, 104a)~~.

15. (Currently amended) ~~Charged~~ The charged particle emission component according to claim 14, ~~whereby wherein~~ the first UHV region does not comprise elements, which essentially block a portion of the charged particle beam.

16. (Currently amended) ~~Charged~~ The charged emission component according to ~~any of the claims 14 to 15~~ claim 14, ~~further comprising any of the features of claims 1 to 13~~ further comprising an aperture unit for differential pumping between the emission component and a further chamber of a charged particle beam column.

17. (Currently amended) ~~Charged~~ The charged particle emission component

according to ~~any of claims 1 to 16~~ claim 1, wherein ~~[[the]]~~ surfaces of the first UHV region are the surfaces of at least the following components:

the emitter ~~[[ (16) ]]~~,  
the residual gas diffusion barrier, and  
~~[[the]]~~ a part of the emission component housing ~~(101)~~ corresponding to the first UHV region, ~~[[and]]~~

and wherein ~~[[the]]~~ surfaces of the second UHV region are the surfaces of at least the following components:

the at least one beam shaping element,  
~~[[the]]~~ a differential pumping aperture ~~(109; 18; 108; 402)~~, and  
~~[[the]]~~ a part of ~~[[an]]~~ the emission component housing corresponding to the second UHV region.

18. (Currently amended) ~~Charged~~ A charged particle beam device ~~making use of a charged particle emission component according to any of the preceding claims comprising a charged particle emission component, the emission component comprising:~~

a first ultra-high vacuum (UHV) region wherein the first UHV region does not comprise elements which essentially block a portion of the charged particle beam;  
a second UHV region; and  
a residual gas diffusion barrier separating the first and the second UHV regions,  
wherein the first and the second UHV regions each have a vacuum flange.

19. (Currently amended) ~~Method~~ A method of operating a charged particle beam device, ~~comprising the steps of:~~

evacuating a first ~~[[UHV]]~~ ultra-high vacuum (UHV) region to a maximum pressure of ~~maximal~~  $10^{-8}$  mbar;

evacuating a second UHV region to a maximum pressure of ~~maximal~~  $10^{-8}$  mbar;  
evacuating at least a further chamber to a maximum pressure of ~~maximal~~  $10^{-5}$  mbar; and

emitting a charged particle beam such that a portion of the charged particle beam is essentially not blocked within the first UHV region.

20. (Currently amended) ~~Method~~ The method of operating a charged particle beam device according to claim 19, ~~whereby~~ wherein:

the charged ~~particles are~~ particle beam is emitted with an emission angle such that the amount of charged particles impinging on surfaces located in the first UHV region is ~~maximal~~ maximally 20 % of the amount of charged particles impinging on surfaces located in the first and the second UHV regions.

21. (Currently amended) ~~Method~~ The method of operating a charged particle beam device according to ~~any of claims 19 to 20, whereby~~ claim 19, wherein a portion of the beam is blocked in the second UHV region, such that the beam is shaped.